

Exploring the Land Use Land Cover Change and its Implications for Climate Regulation in Ibadan Metropolis

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INTRODUCTION

Land use land cover change(LULC) refers to the modification of the earth's surface's biophysical attributes for human purposes and is the most significant human ecological footprint. This has a tremendous effect on the perturbation of the natural environment as evident in the land use land cover change observed today. Changes LULC contribute to carbon emissions that eventually result in climate change and global warming.

Therefore, this study aims to identify and analyze the change dynamic of the LULC in Ibadan Metropolis to provide information that is useful for policymakers and meaningful actions toward climate regulation.

METHODS

- Study area: Ibadan Metropolis, Nigeria (11 Local Government Areas)
- Satellite imageries: Landsat 7 (ETM) and Landsat 8 (OLI/TIRS)
- LULC class: Bare land, Built-up, Vegetation, and Waterbody

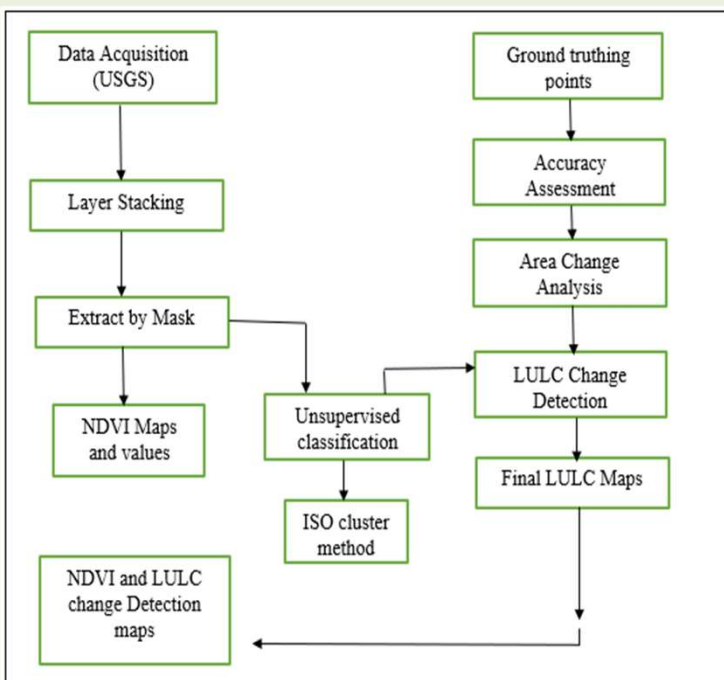


Figure 1: Methodology flowchart

RESULTS & DISCUSSION

Table 1: Area change (sq.km) of the LULC class in percentage for each year

S/N	Land Cover class	Area 2002 (sq. km)	%	Area 2014 (sq. km)	%	Area 2022 (sq. km)	%	Change %
1	Bare land	116.77	3.82	265.19	8.67	263.83	8.62	4.8
2	Built-up	315.73	10.32	569.05	18.60	1,105.18	36.12	25.8
3	Vegetation	2,622.88	85.71	2,217.62	72.47	1,685.35	55.07	-29.93
4	Waterbody	4.69	0.15	8.18	0.27	5.76	0.19	0.04
	Total	3060.1	100	3060.0	100	3060.1	100	0.71

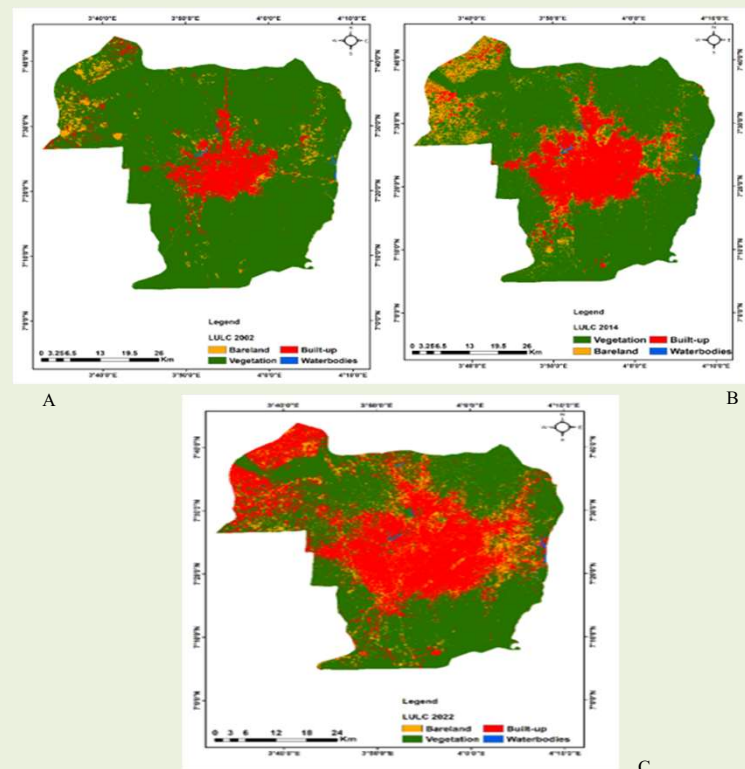


Figure 2: A) Land Use Land Cover map for 2002 B) Land Use Land Cover map for 2014 C) Land Use Land Cover map for 2022

CONCLUSION

- This study attests to the rapid decrease in vegetation in Ibadan Metropolis which can have an adverse effect on the climate.
- This will help policy makers to make informed decisions and take meaningful actions toward climate change regulation and sustainability.

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